REMARKS

As a preliminary matter, Applicants thank the Examiner for the continued acknowledgement of allowable subject matter in claims 12 and 14.

Claims 11 and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (U.S. 5,216,514) in view of Miyazawa (U.S. 5,731,794). Applicants respectfully traverse this rejection because neither of the cited references, whether taken alone or in combination, teaches or suggests a period within one frame time that is provided after the data writing and erasing processes within the same frame time. Furthermore, the two cited references cannot be properly combined as proposed by the Examiner.

The Examiner asserts that Ono's display period (column 18, lines 9-17) is analogous to the holding period of the present invention during which neither data erasing nor data writing is performed. Although it should have been clear to one skilled in the art that Ono's retaining period is not described to perform the same function as the holding period of the present invention, the Examiner should nevertheless understand that Ono's retaining period cannot read upon all of the features and limitations of the claimed invention.

As acknowledged by the Examiner, Ono's retaining period is specifically described to be provided *between* the erasing and writing periods of the display period. Independent claims 11 and 13, on the other hand have been amended to more affirmatively recite the order of frame periods previously claimed, namely, that the holding period of the

present invention occurs after the data erasing and writing periods within one time frame. Accordingly, the rejection is traversed for at least these reasons alone.

Applicants further traverse the rejection because Ono fails to teach or suggest the features of the present invention relating to an image being displayed on a frame by frame basis by repeating a data writing process and a data erasing process for an active matrix panel. Ono describes, at column 10, lines 35-43, that the entire display is erased during a single frame period, but only some of the pixels are reversed during the same frame. Accordingly, Ono cannot read upon the present invention as asserted by the Examiner, with respect to the additional frame by frame limitations of the independent claims.

The citation to Miyazawa fails to overcome either of the deficiencies from the Ono reference noted above. The Examiner cites Miyazawa merely for teaching that a "liquid crystal display could be an active matrix display," and justifies the proposed combination on the basis that "the matrix type LCD and the active matrix type LCD are alternative (sic) for each other." The Examiner's rationale, however, fails to justify the actual combination proposed against the present invention. Miyazawa does not teach or suggest that active matrix displays are interchangeable with passive displays in every circumstance, as implied by the Examiner.

More particularly, the Examiner has not cited to any teaching or suggestion within Miyazawa that active and passive matrix displays have interchangeable structures/components, or that the two types of displays operate according to identical driving

methods and principles. The present invention is, after all, drawn toward a specific structure and operation of an active matrix liquid crystal device. The Examiner had the burden to demonstrate where it was taught in the prior art that the actual teachings cited from the Ono reference could be adapted to this particular active matrix device. The Examiner has not met this burden. The cited portions from Miyazawa do not teach or suggest a combination that can read upon the present invention.

In fact, it should be clear that the teachings of Ono cannot be easily applied to an active matrix device like the present invention, or a method of driving such a device. As featured by Ono, the liquid crystal material having a memory property will demonstrate only two operating states, namely, a light transmitting state and a light scattering state. The light scattering state occurs in combination with a comparatively high voltage and either an applied direct current, or low frequency alternating current (1 Hz, for example). The light transmitting state, on the other hand, though also occurring with a comparatively high voltage, has a significantly higher frequency (1 kHz, for example) alternating current applied. These states are then maintained at relatively lower voltages.

The Examiner has not cited to any affirmative teachings or suggestion that the device in Ono may be actively driven. An active drive carries out line writing to bring about a light scattering state, with a comparatively high voltage being applied during a selection period. To be able to then resume the light transmitting state from the scattering state, a

device according to Ono would have to apply the comparatively high voltage with a high frequency. This method, however, would not function as proposed by the Examiner.

Even if a high frequency voltage is applied as taught by Ono, when the non-selection period follows immediately after the high frequency voltage application, a high voltage direct current would have to be applied to the non-selection period in order to retain the high voltage applied at the end of the selection period. The result of this application method, however, would be the light scattering state, and not the light transmitting state that was sought. Accordingly, the Examiner's assertion that active and passive matrix displays are mere equivalents of one another with respect to their driving methods, and structures, is erroneous as applied to the present claims.

With respect to the claims to the present invention therefore, Applicants submit that it should be clear to those skilled in the art that the active driving method and the passive driving method have significant differences. In the active driving method, a pixel voltage applied in a selection period is retained in a non-selection period, whereas in the passive driving method, the non-selection voltage is not retained from a previous period, but applied from elsewhere. None of the cited portions from the two references overcome this clear difference between the driving methods.

The proposed combination of Ono with Miyazawa is further nonobvious because the liquid crystal material taught by Ono is different than the nematic material used in an ordinary liquid crystal display device. In an ordinary nematic device, the intensity of

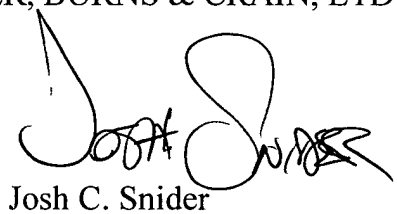
light transmittance depends on the absolute value of an applied voltage. Active and passive drives would therefore only be seen to share some common features when such ordinary nematic liquid crystal is utilized.

The liquid crystal material described by Ono, however, operates with a direct current of relatively high potential, thereby bringing about a light scattering state without resuming the light transmitting state until the application of a high frequency/high voltage. The Examiner has cited to no teaching within either reference that the liquid crystal material taught by Ono will function the same as an ordinary nematic device, or that Miyazawa justifies the Examiner's assertion that active and passive display devices are mere alternatives, even in cases where Ono's different liquid crystal material is used. As discussed above, the teachings of Ono do not conform to the types of passive matrix devices that the Examiner asserts to be taught by Miyazawa as being alternatives for active devices. Accordingly, for at least these reasons as well, the outstanding section 103 rejection of claims 11 and 13 should be withdrawn for these still further reasons.

Accordingly, for all of the foregoing reasons, Applicants submit that this Application, including claims 11-14, is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney again if a further interview would expedite prosecution.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By 

Josh C. Snider
Registration No. 47,954

Customer No. 24978

April 11, 2006

300 South Wacker Drive
Suite 2500
Chicago, Illinois 60606
Telephone: (312) 360-0080
Facsimile: (312) 360-9315
P:\DOCS\1100\65170\A53083.DOC